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Inter-rater agreement of visual footpad dermatitis scoring in Danish broilers



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Background

Footpad dermatitis (FPD) is a welfare indicator in the EU, and also responsible for economic losses in broiler production

The objectivity of the FPD surveillance system performed in Danish abattoirs is essential with regard to enforcement measures and subsequent compliance of farmers

Objective

To assess inter-rater agreement of FPD scoring between two independent raters and the abattoir of origin

Materials & Methods

1799 chicken feet from 18 flocks were collected at a single Danish abattoir in September-October 2014 and visually assessed by two independent raters regarding FPD scores and visual criteria



FPD scoring system



No or very minor lesions

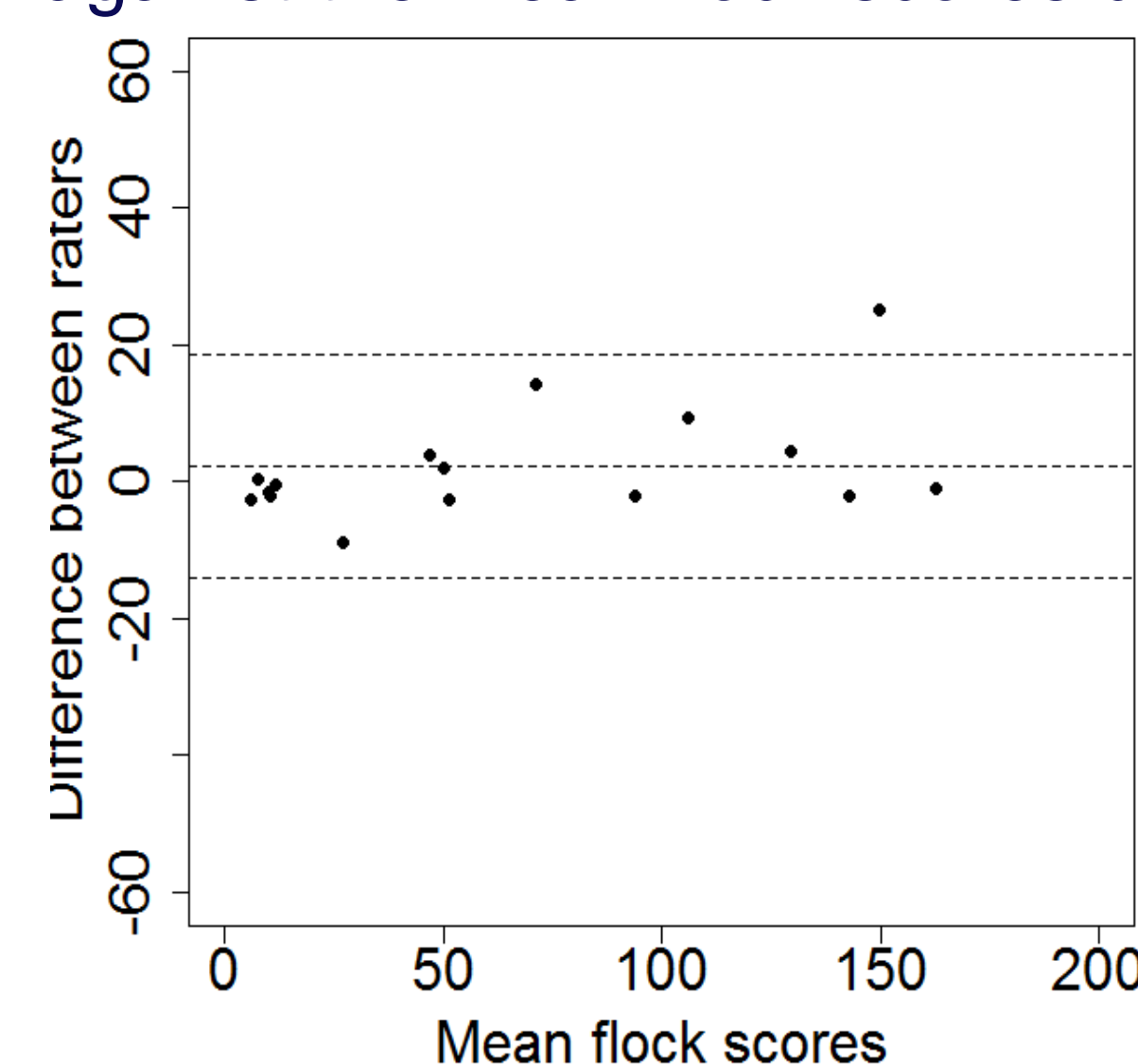


Less severe lesions



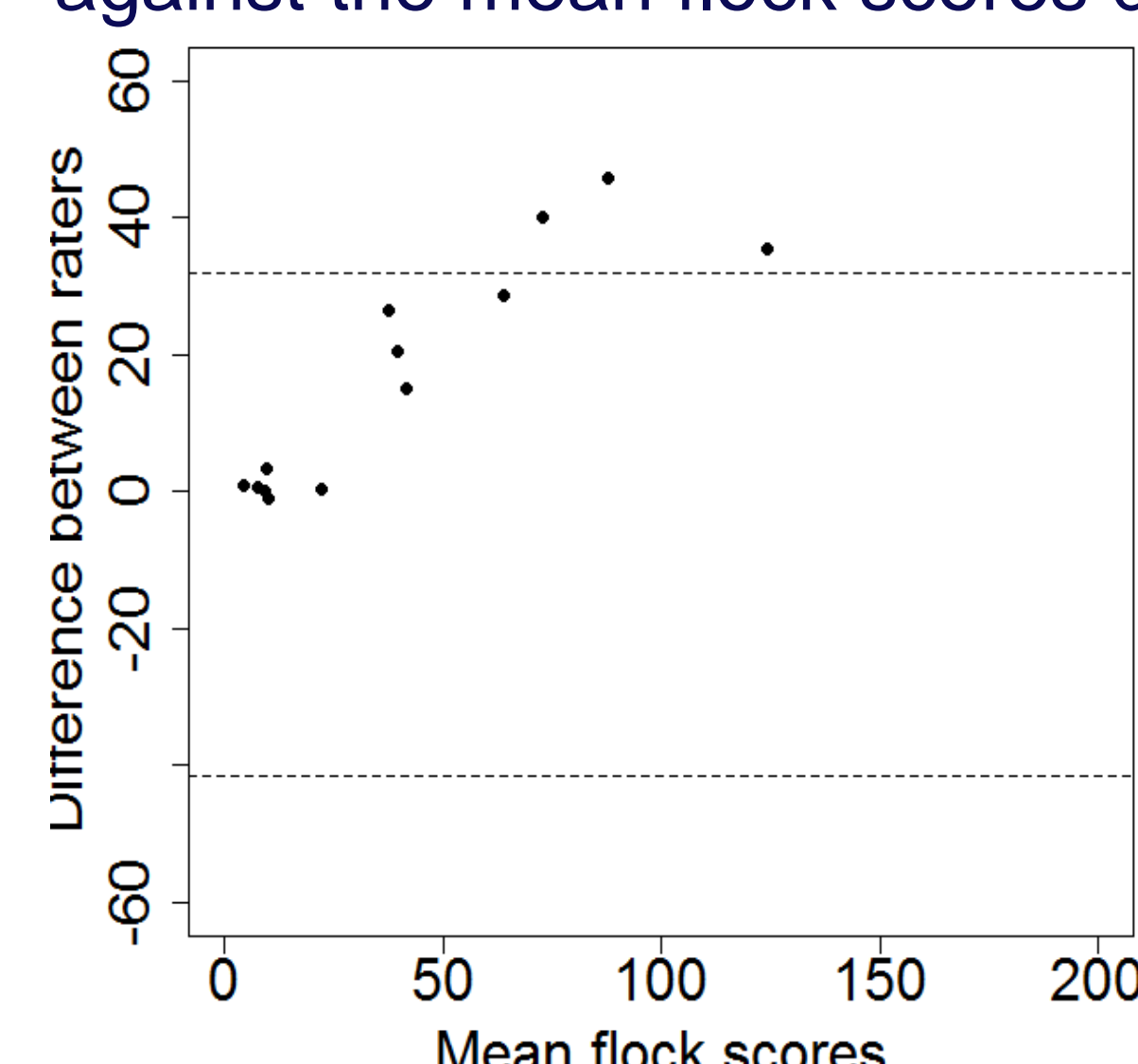
Severe lesions

Bland-Altman plot illustrating agreement between raters against the mean flock scores differences



Level of agreement between raters:
HIGH for scores 0, 1 and 2

Bland-Altman plot illustrating agreement between rater 1 and the abattoir of origin against the mean flock scores differences



Level of agreement between rater 1 and the abattoir of origin:
HIGH for score 0 and 1, but LOW for score 2

FPD flock score calculation =
 $0.5 \times (\text{number of feet scored 1}) + 2 \times (\text{number of feet scored 2})$

FPD visual criteria



Discolouration



Loss of tissue



Necrosis



Exposed dermis

Level of agreement between raters:

- discolouration and necrosis – HIGH
- loss of tissue – MODERATE/HIGH
- exposed dermis – LOW

Conclusion

Poorer agreement in feet with more severe lesions

The Danish scoring procedure can be **improved** and may need **uniformization** → better enforcement → improved compliance of farmers



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